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Women's work and women agricultural labourers :  
a study of the Indian Census

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It is by now almost an axiom with demographers, labour economists and economic historians that Indian census data on women's economic activity are seriously flawed. Undercounting and changes in definition from one census to the next are held to have rendered the numbers volatile and unreliable. Most analysts studying labour force changes over time concentrate therefore on the data for men, and tend to draw conclusions for the working population on this basis.<sup>1/</sup>

I wish to argue in this paper that the data on women, while flawed, can tell us a considerable amount about women in the labour force, provided we are careful to sort out the good census years from the bad, and are clear about the questions we want answered. Furthermore, male labour force data cannot be used as a proxy for women, at least in the case of agricultural labourers. This is illustrated through the preliminary results of an exercise that examines the possible relationships between certain agricultural variables and the incidence of female agricultural labour. The first two sections of the paper focus on the reliability of the census data over time, while the third considers the data on female agricultural labourers at the disaggregated state level.

#### I. Sources of Undercount of Women workers

As has been noted by a number of writers, in all societies that have undergone a degree of monetization and commercialization, women do two broad categories of work - that which produces income whether or not this accrues directly to the woman, and that which does not. The latter includes domestic work, however that is understood in the particular society, but (mainly) including all tasks related to the feeding,

cleaning, nurturance and family maintenance of both adults and children. Such work is largely women's work, and women may, perforce or by choice, spend the bulk of the working day on this type of work.

Income producing work is itself of two types - that which is done in the home or on the family farm, and that which is done outside the home. The latter is generally work done for wages, though certain types of petty trade and services would also be included. The former consists of unpaid labour on the family farm, and outwork under some variant of the putting out system. Such work differs from work done outside the home in two important respects. It allows women more easily to mesh domestic work with income earning. On the negative side, the income generated by this work often does not accrue directly to the women, and hence does not provide her with the degree of economic (and social) independence that income earning outside the home and the control of the husband/mother-in-law does.<sup>2/</sup>

The sources and extent of undercounting of women workers vary for the different categories of work specified above. In general, four major sources of undercounting can be identified:

- i. exclusion of certain types of work,
- ii. direct bias on the part of either the respondent or the census enumerator, both of whom are usually male,
- iii. problems in the criteria of "gainful work", "main work", "subsidiary occupation" etc., and
- iv. difficulties in implementing the criteria arising from the framing and ordering of questions in the census questionnaire.

Non-income producing domestic work suffers most systematically from exclusion. While it is now almost automatic that domestic work be ignored in census counting, the criteria adduced to justify such exclusion are arbitrary and quite inconsistently applied. In an economy that is only part monetized, (i.e. only part of production especially in agriculture is for sale, the rest being for own consumption) there is analytically no real distinction between domestic work and agricultural work whose product is consumed within the home. The latter produces tangible goods while the former produces chiefly services, although it is arguable that the work of cooking transforms tangible raw materials into tangible food. In any case, the distinction between goods and services is not generally used for purposes of exclusion in either labour force statistics or national income accounts. Though utmost care is taken to ensure reliable estimates of non-marketed agricultural output, domestic output (if we can so call the produce of domestic work) is regularly excluded. While non-marketed services are, it is true, more difficult to account than non-marketed goods, the task is by no means an impossible one. Certainly, whatever be the problems in counting domestic output, the women who do this work can be counted quite easily. There is no more justification for excluding them than for excluding male cultivators producing food for own consumption. The proper accounting of such workers will rescue domestic work from its current association in the census with begging, theft and other similarly unproductive activities. It will allow us also to know more precisely which women (by age, literacy level etc.) do how much of such work, and to know how domestic work is combined as main or secondary

occupation with other types of work. Since the census data on economic activity and occupational distribution are a major basis of policy initiatives, redressing the conventional exclusion of domestic work will go a considerable way towards helping formulate policies sensitive to the needs of just under half the Indian population.<sup>3/</sup>

Undercounting of women workers doing income-producing work at home is usually due either to problems of ambiguity in the criteria or due to bias on the part of male respondents/enumerators in acknowledging the existence and extent of women's work on family holdings. On the other hand, women doing wage labour would be undercounted mainly due to a criterion of "worker" or "earner" that is so strict as to leave out those who are only employed (by choice or, more often, by non-availability of work) for part of the reference period.

Some or all of these sources of under enumeration have been operative through the years in the Indian census. Let us now examine the census figures to show which sources were operative in which census and hence which type of workers were undercounted.

## II. Undercounting in the Indian Census

The data on work participation rates are well known (Table I). Three features of the rates are noteworthy. First, there is considerable fluctuation in the rates, especially over the last three censuses. Second, the direction of change of female and male rates is the same, but the depth of fluctuation is greater for the female rate. Third, the long term trend from the start of the century is downward for both women and men. Much of the analysis of these data has tried to

determine whether the fluctuations and the downward trend are due to changes in concepts, or to real economic and demographic changes in participation. The latter could be caused by changes in age-structure, urbanization, and/or decline in traditional avenues of employment coupled with an insufficiency of new work openings.

i. Conceptual changes

One of the first problems encountered by designers of census questions in a semi-monetized economy is the choice between income and work criteria. The former excludes those who work without earning an income (e.g. unpaid family labour), while the latter excludes those who earn incomes without working (e.g. non-cultivating rentiers). While it is arguable that all those who earn incomes should be considered "economically active" in some sense, it is far more important to include all those who are workers than to include those who consume without producing. Certainly far more women are likely to be counted under the work rather than the income criterion.

The actual practice in the Indian census up to and inclusive of the 1951 census was to use hybrid criteria with varying emphasis on work vis a vis income. Till the 1921 census, the population was divided into actual workers and dependants. Actual workers included all those who earned an income even if they did not work, and all those who regularly worked regardless of their income status.<sup>4/</sup> Thus, while the nominal criterion was work, the actual criterion was a hybrid; hence both rentiers on the one hand and unpaid family labour on the other were included in the economically active population. Between 1901 and

1921, there was little perceptible change in the work participation rates for either men or women.

The 1931 census also used an amalgam of work and income to define the economically active population. Two categories of earners (all income earners) and working dependants (non-earners who worked to augment household income on a fairly regular basis) together constituted the economically active population. The rest were classified as non-working dependants. Thus, in this census too, non-working earners were included, while unpaid family labour was also included but as part of a distinct category. Whether these criteria were actually implemented will be discussed later.

The fate of paid but marginal workers is a little more ambiguous. Both the 1921 and 1931 censuses specified "regularity" as a requisite for being called a worker; since this was not explicitly defined, and was, furthermore, applied only to women and children, it appears apriori that a number of irregular, paid women workers may have fallen into the non-worker category. This corresponds to the third source of bias specified in section I above. On the other side, confusion about the criteria led to the inclusion of 7 million non-income producing women doing domestic work in their own homes as working dependants.

The 1951 census nominally shifted to a pure income criterion and classified the population into self-supporting earners, earning dependants and non-earning dependants. This appears on the surface to have made the criteria more consistent internally on the basis of income

and to have excluded unpaid family labour apriori. The detailed instructions show this not to have been the intention,<sup>5/</sup> and the 1951 criterion was also meant to be a hybrid of work and income. However either due to direct bias on the part of the respondent/enumerator or due to difficulties in implementing the criteria, the actual effect was very probably underenumeration of family labour. This problem was unevenly distributed, being more acute in certain regions of the country, especially in the south, Orissa and Bihar.<sup>6/</sup>

+ In 1961, there was a shift back to the work criterion, but this was not the hybrid criterion that was explicitly in use upto 1921. Non working income earners were now excluded.<sup>7/</sup> Domestic work continued to be excluded, but unpaid family labour and marginal workers (those who had worked at least 1 hour per day during the working season in agriculture) were netted in. Perhaps as a result, the female work participation rate returned to the 1931 level. The pendulum swung the other way in the 1971 census - the framing and ordering of the questions ensured that most marginal workers and probably a large number of unpaid family workers were left out.<sup>8/</sup>

The 1981 census attempted to rectify the strictness of the 1971 census by dividing the population into main workers, marginal workers and non-workers, and by starting with the question "Did you work any time at all last year?". It was expected that this would not only net in all workers, but would also make a useful distinction between main and marginal workers, and would provide data that could



be compared to both the 1971 and the 1961 censuses. However the 1981 rate (provisional) lies almost half-way between the previous two rates. Whether this represents a real decline from 1961 needs to be examined. It has been suggested that differences in the ordering of questions between 1961 and 1981 may account for the difference.<sup>2/</sup> While we do not have enough information yet, I find this suggestion difficult to accept since it is hard to fault the ordering or the clarity of the 1981 questions.

It appears from the above discussion of sources of undercounting and from the data in Table I that in 1951 and 1971 the strictness of the criteria themselves accounts for a significant portion of the decline in rates. A quantification of this factor is naturally difficult, but some attempt has been made to compare the 1951 census data with disaggregated, state-level data obtained from the NSS 9th Round (1955) and the ALE (1950-51).<sup>10/</sup>

Apart from 1951 and 1971, there were two other periods when the rates declined significantly, i.e. between 1921 and 1931, and between 1961 and 1981. The rates fell for both men and women but the female rate underwent a much higher percentage decline. Were these declines real or due to conceptual shifts?

The question of the similarity or difference between the 1931 and 1951 censuses constitutes a puzzle with many layers. On the surface, the 1951 criterion of "earning dependant" appears more likely to exclude unpaid family labour than the 1931 criterion of "working dependant". But a deeper examination casts doubt on

this assumption. The detailed instructions to the census enumerators in 1951 specified that "where two or more members of a family household jointly cultivate land and secure an income therefrom, each of them should be regarded as earning a part of the income, none of them is therefore a non-earning dependant."<sup>11/</sup> At this level therefore, the 1951 census seems to have been no more exclusionary than the 1931 census.

However, serious questions must be raised for both years in terms of implementation of the instructions. The implementation of the 1931 criterion for "working dependants" has already been called into question.<sup>12/</sup> There is also some reason to believe that the implementation of the 1951 census was not very different from that for the 1931 census.<sup>13/</sup>

The numbers themselves give us reason to believe that the 1931 census involved as much undercounting as the 1951 census. An examination of the sector-wise disaggregated data lends strong support to the belief that unpaid family workers in agriculture were equally excluded in both censuses. Table II shows that after a significant drop between 1921 and 1931, the sex ratio (females per 1000 males) among agricultural and allied workers remained constant in 1951. In 1961 it climbed back to the 1921 level. Thus, undercounting of unpaid women family workers in agriculture probably took place equally in 1931 and 1951.

The decline in the aggregate work participation rate between 1931 and 1951 was due therefore to a continuing fall in women's relative position in non-agricultural work, and was not due to a fall in agriculture. The steep fall in women's role outside agriculture began between 1921 and 1931, and was succeeded by a further steep fall between 1931 and 1951. How do we

know that this decline was not due to undercounting of unpaid family labour in household industry akin to their undercounting in agriculture? While the sex-ratio in manufacturing did improve in 1961, it did not return to the 1921 level, as was true for agriculture. Secondly, in all non-agricultural activities other than manufacturing, the sex-ratio in 1961 remained below the 1921 level. Both factors indicate a real decline in women's work outside agriculture. In sum, the rates for 1931 as for 1951 indicate mainly undercounting of family workers within agriculture and real declines outside agriculture in women's work-participation. Sufficient information is not yet available from the 1981 census to explain the decline between 1961 and 1981, but it is likely that the decline is largely a real one.

Apart from the overall undercount of women workers in agriculture, it would be useful to know the relative magnitudes of the undercount of unpaid family labour vis a vis part-time wage labourers. Prior to 1961, judgements about what constitutes "regular" work may well have excluded a significant number of the latter. Certainly, we suspect that this happened in 1971. While no direct evidence of the relative weights of the two sources of undercount exists, some indirect evidence can be adduced from the existing data.

Our hypothesis is that, at least in the 1971 census, unpaid family labour was more likely to have been excluded than marginal wage labour. In 1961 (the year of minimal undercount), the following states were above the all-India average in the ratio of women agricultural labourers to agricultural workers (i.e. labourers plus culti-

vators, with the latter including unpaid family labour) - Andhra, Bihar, Kerala, Maharashtra, Tamilnadu and West Bengal. On the other hand, Haryana, Gujarat, Madhya Pradesh, Punjab, Rajasthan, Assam and Uttar-Pradesh were below average while Karnataka and Orissa were on the border. (See Table IV). If our hypothesis were correct, we might expect a greater undercount in 1971 in the latter states which had relatively more unpaid family labour in 1961. This would be reflected, *ceteris paribus*, in a downward shift in the rankings of work participation rates between 1961 and 1971 in these states. The reverse would be true for the above average states. This is indeed the case. With the single exception of Uttar Pradesh, we find that all the states whose work participation ranks improved in 1971, had above average proportions of agricultural labourers in 1961, and vice versa (See Table IV).

A more rigorous test can be obtained by ranking the state level ratios of the 1971 female work-participation rate to the 1961 rate (See Table III). This is then correlated with the ratio of women agricultural labourers to agricultural workers in 1961. If there has been a relatively greater undercount of unpaid family labourers, the two ratios should be positively correlated. In fact, the correlation is positive and significant at the 1% level. It would appear from this that, unpaid family labour suffered more seriously from undercounting in 1971.

The above also enables us to draw some inferences about the spatial distribution of undercounting. It would appear that the problem was relatively more serious in those states that had higher proportions of unpaid family labourers relative to waged agricultural labourers .

Ceteris paribus, the undercount was therefore probably higher in Gujarat, Haryana, Punjab, Rajasthan, UP and Madhya Pradesh than in the southern and eastern states. However, a word of caution is needed here. The above discussion only tells us about the undercount in 1971 relative to 1961. It is of course possible that the 1961 data themselves represent a significant undercount, whose relative magnitudes cannot really be assessed.

(ii) Economic & Demographic Changes

The long run declining trend in the work participation rates for men and women may be due to real changes in age-structure, urbanization and/or the decline in traditional avenues of employment. A shift in the age-structure of the population towards the younger ages ( $<15$ ) will have a natural tendency towards reducing the crude work participation rate.<sup>14/</sup> Growing urbanization with concomitant growth of the organised factory sector and reduction in traditional industry generally leads to a disproportionate drop in women's employment. This is so because the existing sexual division of labour assigns domestic work almost exclusively to women, making it difficult for them to take on factory work as well. J.P.Ambannavar has quantified the relative importance of these factors for men and women. He concludes that for men, 46% of the decline in the work participation rate is due to changing age-structure, 10% due to urbanization and 44% to other causes; the corresponding figures for women are 26%, 30% and 44%.<sup>15/</sup> It is worth noting that for both women and men, 44% of the decline is due to "unknown causes" of which presumably undercounting may form a significant part.

To sum up, it appears that despite the relatively greater under-enumeration of women workers in the 1931 and 1951 censuses, the more inclusive criteria did away with this problem. This is corroborated by the fact that the sex-ratio of workers in agriculture and allied activities was almost identical in 1961 and 1911. Secondly, the relative importance of demographic (age-structure) and economic (decline in traditional work) factors is reversed for men vis-a-vis women. The most important factor for women is the decline in traditional employment avenues; this is borne out by changing sex-ratios for workers in modern manufacturing activities versus traditional production in the household sector. As a result, women have been increasingly entering agriculture which has become their main avenue for growing employment.<sup>16/</sup> The proportion of women workers among all workers fell from 33% in 1901 to 27% in 1961. The sex ratio (women per 1000 men) among workers declined from 504 in 1901 to 460 in 1961 and further to 367 in 1981.

### III Agricultural labourers - indices and incidence

Our objective in this section of the paper is a fairly limited one. We wish to cull out of the census data for the period 1961-81 what information we can about the incidence and regional variation in women agricultural labourers. To do this, we have to examine alternative possible indices of incidence and explain the relationships between them. We will also set forward some preliminary hypotheses about the factors underlying the regional variations in incidence.

The discussion is guided by the belief that census data on women agricultural labourers are less subject to undercounting (as argued in the previous section) than are the data on women cultivators, and can therefore constitute a fairly useful source of information. Prima facie evidence to support this belief is provided by the fact that our results do not change very much as between 1961 and 1971, years in which there were very sharp differences in the extent of under-enumeration. In addition, we hypothesize that the factors that influence women's participation as agricultural labourers may not be identical to those that influence men; for example caste may be more important. Therefore, we focus some attention on regional variations in the ratio of female to male agricultural labourers.

Our use of census data for this period may be questioned on the grounds of the availability of other information from the NSS and Rural Labour Enquiries. The census, however, with all its flaws, is the only large body of data with historical coverage. The preliminary results presented here are part of a larger study that incorporates both historical and field research; we therefore have found it useful to see what can be obtained out of the census for the current period before trying to see if similar patterns can be found in the historical data as well.

(i) Work-force variables - interrelations

A striking feature of the inter-state patterns of women's work participation, the worker sex-ratio (columns 1 and 4 of Table III), the ratio of agricultural labourers to women agricultural workers (column 2 of Table IV) the agricultural labour sex-ratio and the

proportion of agricultural labourers in the rural female population (columns 1 and 3 of Table IV) is their stability over time. While definitional and economic/demographic changes have affected work-force variables in this period, the state-level rankings have remained very steady.<sup>17/</sup> Perhaps this is not surprising - unlike the work-force data for men, there are very large inter-state variations in the data for women, and these differences have remained significant over the period.

During this time, the all-India decline in the female work participation rate and the worker sex-ratio is reflected in similar declines for most of the states. Punjab is a notable exception to this trend; both ratios have increased there. The worker sex-ratio has also improved though to a lesser extent in West Bengal. However, it must be remembered that these two states still rank the lowest in both the variables considered. Further, West Bengal has also registered only a small decline (much below the all-India percentage decline) in the work-participation rate, as have Gujarat, Andhra and Kerala.

Where agricultural labourers are concerned, the state data again reflect the all-India trends. In all states, the proportion of women agricultural labourers among agricultural workers increased between 1961 and 1971, as is now well known (Table IV). However, the proportion of women agricultural labourers in the rural female population did not increase except for Tamilnadu, Punjab, Karnataka, Andhra and MP (Table V); <sup>the</sup> sex-ratio among agricultural labourers actually declined. This raises the issue of the appropriateness of indices for women agricultural labourers; we take this up later.



We now turn to the inter-relations among some of the work-force variables discussed above. We find that the female work-participation rate, the worker sex-ratio, the agricultural labour sex-ratio, and the proportion of women agricultural labourers in the rural female population are highly correlated with each other.<sup>18/</sup> Broadly speaking, the Indo-Gangetic belt, consisting of Punjab, Haryana, U.P., Bihar, Orissa and West Bengal, lies below the all-India average for these variables. The southern zone together with the Deccan plateau, i.e., Andhra, Madhya Pradesh, Maharashtra, Karnataka and Tamilnadu lie above the average, while Gujarat is a border-line state. The particularly excessive undercount of women cultivators in 1971 meant that the female work-participation rate was below average that year in Rajasthan (the state with the highest proportion of women cultivators in the female population), although it had been above average in 1961. The reverse is true for Kerala (the state with the second lowest proportion of women cultivators), and for the same reason:

The correlations above indicate to us the extent to which both the female work-participation rate and the sex-ratio among agricultural labourers are influenced by the incidence of agricultural labourers among the female population. This is true not only in 1971 when agricultural labourers constituted 55% of all women workers, but even in 1961, when they were only 26%. The higher the proportion of the female population working as agricultural labourers, the higher the ratio of female to male agricultural labourers. This is of particular interest, for those southern and central districts of the country where, according to the census, there are actually more women than men agricultural labourers.

Furthermore, it is the proportion of agricultural labourers in the rural female population that appears to be causal, rather than the proportion of agricultural labourers among women agricultural workers (i.e. labourers plus cultivators). Indeed, this latter ratio is uncorrelated with the work participation rate in any year, and with the proportion of agricultural labourers in the female population and the agricultural labourer sex-ratio in 1971 and 1981. Thus, the distribution of agricultural workers into agricultural labourers and cultivators, does not appear to affect the other variables, even though the incidence of agricultural labourers in the female population does. This might mean that those factors that determine the incidence of women cultivators in the population may be quite independent of factors affecting the incidence of women agricultural labourers, or of the total number of women workers in the population. The implication of this hypothesis for the choice of indices to represent women agricultural labourers is explored in the next part.

(ii) Alternative indices for women agricultural labourers

The two main alternative indices to measure the presence of women agricultural labourers are those mentioned above - their proportions in the female rural population or among female agricultural workers. Other variables such as the agricultural labour sex-ratio and the proportion of agricultural labourers among all female workers are themselves so highly correlated with the two main indices (respectively) that we focus on the latter at present.

From the earlier discussion, it would appear that the proportion of agricultural labourers in the female population is likely to be a better index for measuring proletarianization among rural women. The proportion among women agricultural workers seems too much affected by factors that have an independent effect on the number of women cultivators. For example, West Bengal has relatively few agricultural labourers in its female population, but, because it also has few women cultivators, the proportion of agricultural labourers among women agricultural workers is relatively high. Another reason for preferring the index with female rural population in the denominator, is that it is less vitiated by the undercounting problems that might affect an index dependent on women cultivators.

The question remains whether the rejected index can provide clues to any interesting relationships, beyond simply measuring the distribution of women agricultural workers as between labourers and cultivators. We do not drop it entirely but retain it in the analysis, on the understanding that it contains information distinct from that contained in the ratio of agricultural labourers to the female population and the agricultural labourer sex-ratio.

Of particular interest is the finding that (if Assam is excluded) the rejected index, i.e., the ratio of agricultural labourers to women agricultural workers is positively correlated with the proportion of (gross cropped) cereals area devoted to rice. At first glance, this appears to confirm the traditional belief that regional variations in women agricultural labourers correspond to regional variations in the

extent of paddy cultivation. In fact, however, the observed relationship is reflective of a negative correlation between paddy cultivation and the presence of women cultivators in the female rural population.<sup>19/</sup>

This negative relationship between paddy cultivation and the presence of women cultivators is one that has sometimes been attributed to sharp caste differences between women of the landholding classes and the scheduled caste/tribe women who work as labourers in the paddy regions. It may also be related to agroclimatic factors affecting labour use in these regions. This needs further exploration. Its effect, however, is to reduce the total number of women agricultural workers in paddy regions, thereby raising the ratio of agricultural labourers among women agricultural workers.

The above discussion implies that paddy regions are low on women cultivators, but are not necessarily high on women agricultural labourers. This conclusion is borne out by the absence of any correlation between paddy and the proportion of agricultural labourers in the rural female population (our chosen index for measuring incidence). Nor is paddy cultivation correlated with the agricultural labourer sex-ratio.

These conclusions need to be interpreted with some care. They do not question the observed presence of women agricultural labourers in large numbers in the paddy-fields of the country. But they do raise the question of where these women come from, and whether they belong to the states in which they find work, or are migrants drawn from outside. This issue would be particularly relevant in the northeastern region

of the country where paddy is grown extensively using female tribal migrant labour.<sup>20/</sup> Particularly given the fact that the Census is usually conducted around March (during the low season for female labour demand in paddy), these women labourers are unlikely to be counted in the regions where they may actually work during the paddy transplanting or harvesting seasons. This may be exacerbated by a general undercount of tribal women.

What the Census seems to be telling us therefore, especially in the northeastern states, is not whether there are women working as agricultural labourers in a particular region, but whether the women who belong to that region work as agricultural labourers. Further, even when the female migrant labourers are drawn from within the state itself, they may be excessively undercounted because they are tribals, and because the Census is conducted at a season when they are not working. Much deeper exploration is needed therefore of the patterns of female labour migration within the rural areas.

This feature of female labour in paddy is less salient in the southern states where rice cultivation is more dependent on the use of the labour of the scheduled caste women of the region. However, even here, inter-district migration of women agricultural labourers during peak seasons may affect the observed Census variations across districts. This might explain, for instance, why the high paddy districts of Thanjavur, Chingleput and South Arcot in Tamilnadu, or of East and West Godavari, Krishna and Guntur in Andhra Pradesh, have lower agricultural labour sex-ratios than the internal districts in those states.

Alternatively, it is possible that these district level variations reflect a higher proportion of "discouraged" and very marginal women agricultural labourers in the high paddy districts. Again, this is a matter that demands further investigation.

(iii) Agricultural labour incidence -- regional factors

We have already seen, in the previous sub-section, that neither the proportion of agricultural labourers in the female population, nor the agricultural labour sex-ratio is correlated state-wise with the proportion of area under paddy. Secondly, (particularly in regions where labour needs are met through migrant female labourers) the information that the census gives us is more pertinent to the question whether the women belonging to a particular region work as agricultural labourers, rather than the question whether there are women working as agricultural labourers in that region.

This would seem to imply that the census data ought to be analysed in relation to the factors that cause the women of a particular region to become agricultural labourers. Caste may be one such factor. Equally importantly, the extent of regional impoverishment, the rate of agricultural growth, the household income of rural labour households, and the extent of male migration may be important causal factors determining why the women of a region become agricultural labourers, and it is to these factors that we turn our attention in this subsection. A third and related set of causal factors may be the landholding and tenancy patterns in a region, but these are

part of our larger work, and are not analysed in this paper.

The analysis was done for 1960-61 and 1970-71. A crude index of regional impoverishment can be obtained by the extent of dry land in a region, and hence by the extent of area devoted to coarse grains. We therefore classified foodgrains and cereals into the fine varieties (rice and wheat) and the coarse varieties (jowar, bajra, other millets, gram and pulses). The share of coarse varieties in the gross cropped area under cereals/foodgrains was tested against the incidence of agricultural labourers in the female rural population, and the agricultural labour sex-ratio.

Slightly under half the all-India cereal gross cropped area is under coarse varieties, and just under 60% for all foodgrains (Table VI). The states which have below the average area under coarse varieties are Assam, West Bengal, Bihar, Orissa, Uttar Pradesh, Punjab and Kerala. The states above the average in coarse varieties are Haryana, Rajasthan, Gujarat, Maharashtra, Andhra and Karnataka. Tamilnadu is on the border-line. While Madhya Pradesh is below average at the state level, a district level classification shows that the western districts are above average, while the eastern districts (that have plenty of assured rainfall) are below average.

Rank correlations of the relative area under coarse varieties with the incidence of women agricultural labourers and the agricultural labour sex-ratio are significant, although both Rajasthan and Haryana fall outside the fitted relation.<sup>21/</sup> This may well be the result of the land-holding pattern in Rajasthan. On the other hand,

Haryana, as we know, is a relatively prosperous state despite the high proportion of coarse grains, and hence our index of impoverishment may be inappropriate in this case, leading to the lack of fit.

It should be emphasized here that these preliminary results must be treated with great caution. State level analysis is probably too aggregative for us to place great reliance on it; the district-level analysis is still under way. Further, the statistical problems with rank correlations need to be borne in mind, especially when operating with fairly aggregative and non-standardized units such as states.

Some cross-checking of the results was attempted using the rate of agricultural growth in the state, the income of rural labour households, and the extent of male migration, all factors that we would expect to be related to the extent of regional impoverishment. We find very strong negative correlations between the incidence of women agricultural labourers, the agricultural labour sex-ratio and the growth-rates of cereal and foodgrain area and output (Table VIII) as calculated by Bhalla and Alagh for the period 1962-65 to 1970-73.<sup>22/</sup> Thus the slowest growing states in terms of cereals/food grains are those with the highest incidence of women agricultural labourers.

Similarly, there is also a negative correlation between the incidence of women agricultural labourers and the related sex-ratio for 1970-71 and the annual income of landless agricultural labour households obtained by the Rural Labour Enquiry for 1974-75.<sup>23/</sup> Two



states, Orissa and West Bengal lie outside the fitted relationship, but interestingly, these same states have the second and third highest rates of growth of wage-earning women in rural labour households during the period 1964-65 to 1974-75.<sup>24/</sup>

Finally, if Assam is excluded, the rate of (inter-and intra-district) male migration as a percent of the population enumerated in a state in 1971, is positively correlated with the incidence of women agricultural labourers, and also, though less surprisingly, with the agricultural labour sex-ratio.<sup>25/</sup> Thus, all three of the variables we have used, viz., the cereal/foodgrain growth-rate, the income of landless, agricultural labour households, and the extent of male migration, appear to bear out (or, at least, do not contradict) the hypothesized relationship between regional impoverishment and the incidence of women agricultural labourers.

Two qualifications to the above discussion are worthy of re-emphasis. First, no single index of regional impoverishment can be completely satisfactory, especially when we are dealing with fairly aggregative, state level data. Thus the coarse grains proportion in gross cropped area under cereals/foodgrains is not a very good index in the case of Haryana and, possibly, Rajasthan. Similarly, male migration is not a good index of impoverishment in the case of Assam. All these states have relatively high levels of annual income for landless agricultural labour households in 1974-75 according to the Rural Labour Enquiry. Even this last variable is not quite satisfactory since it refers to money, not real, incomes, and because there may be

variation in the availability and expense of such consumption essentials as non-commercial fuel which directly affect the purchasing power of the household's income.

The second qualification arises from the possible relationship between land-holding and tenancy patterns, and the incidence of female agricultural labourers, a relationship that we have not explored in this paper. It is our hunch that land holding patterns are likely to be quite important both directly, and indirectly through their effect on the impoverishment indices that we have used in this paper. The nature of these linkages are not, however, obvious and form part of our larger investigation.

### Conclusion

Although it has been well known that agricultural labour is a major avenue for female employment, neither the factors underlying this phenomenon nor its implications have been adequately studied up to this point. This paper forms part of a larger study that attempts to understand the characteristics of women agricultural labourers historically and in the current period. Since the Census, despite its flaws, is the single most exhaustive source of historical information on the subject, our work has led us into an examination of census definitions and procedures.

In this paper, therefore, we have scrutinized the census with the aim of discovering the relative extent of the undercounting of women workers in different years, the relative magnitude of the undercount of unpaid (women) family workers versus marginal agricultural labourers, and the relative magnitude of the undercount across

states. The very nature of the enterprise dictates that our findings would be indirect and inferential. It is our judgement, however, that the most serious undercounting of women workers took place in the Census years 1931, 1951 and 1971. Secondly, the relative extent of undercounting appears to have been greater, at least in 1971, for women cultivators (i.e. inclusive of unpaid family labour) than for agricultural labourers. Correspondingly, the state-wise distribution of undercounting was probably greater in Gujarat, Haryana, Punjab, Rajasthan, UP and Madhya Pradesh, *ceteris paribus*.

We next attempted to examine alternative indices for measuring the incidence of female agricultural labourers, and showed that the proportion of agricultural labourers in the rural female population is likely to be the least biased index. Closely correlated to it is the ratio of female to male agricultural labourers. Two finds are of interest in this connection. First, excluding Assam, the proportion of cultivators in the rural female population tends to be low in the paddy growing regions. Second, the census regional (i.e. state and district-level) data tell us whether the women of a particular region tend to work as agricultural labourers; the data do not tell us about the presence of women (possibly from other regions) working as agricultural labourers in a region. This calls for a deeper study of the migration patterns of women labourers to the paddy growing areas, especially in states like Orissa, Bihar, West Bengal and Assam.

Finally, the incidence of women agricultural labourers appears to be connected to factors underlying regional impoverishment. It appears to be the women from the poorer regions (coarse grain growing, low foodgrain growth rates, high male migration, low household incomes for landless households) who appear to predominate regionally as agricultural labourers, although many of these women may actually find employment in the paddy growing regions through migration.

Much remains to be done to further test these hypotheses using district level data, examining the historical information, and checking the deeper causal roots in patterns of land-holding and population growth. For the purposes of this paper, we believe we have illustrated the point that census data on women agricultural labourers can be quite informative, provided they are used with sufficient caution.

Table IAll-India Worker Rate

	Workers/ Population		Population Sex-ratio	Workers Sex-ratio
	Women	Men		
1901	31.70	61.11	972	504
11	33.73	61.90	964	525
21	32.67	60.52	955	516
31	27.63	58.27	950	450
51	23.31	54.04	946	408
61	27.93	57.12	941	460
71	(12.13) 14.22 (52.61)	52.75	930	(214) 215
81	(14.44) 20.85 (51.25)	53.19	936	(264) 367
(Provisional)				

Source: Census of India, various years.

- Notes:
1. The sex-ratio is defined throughout this paper as "Women per 1000 men". For convenience, it is expressed in percentage terms in some tables.
  2. Numbers in parentheses correspond to main workers, i.e. excluding secondary workers in 1971, and marginal workers in 1981.
  3. Economic data were not tabulated in the 1941 Census because of the war.

Table IIAll-India Sex-Ratio among Workers

	Agricultural and allied *	Non-agricultural
1911	550	446
1921	547	421
1931	469	353
1951	468	246
1961	547	231

Source: J.P.Amarnavar, "Changes in Economic Activity of males and females in India : 1911-61"  
Demography India, Vol.IV, No.2, 1975,  
 Table 4, P.352.

\* Including "general labourers" and those "not elsewhere classified".

Table III - Worker Rates and Sex-Ratios

	1981 (main workers only)				1971				1961			
	Workers/ Population		Popula- tion Sex- Ratios	Work- ers Sex- Ratios	Workers/ Population		Popula- tion Sex- Ratios	Work- ers Sex- Ratios	Workers/ Population		Popula- tion Sex- Ratios	Work- ers Sex- Ratios
	Women	Men			Women	Men			Women	Men		
INDIA	20.84	53.20	936	367	12.13	52.61	930	214	27.93	57.16	941	460
Andhra Pra- desh	38.76	50.73	976	623	24.16	58.22	977	405	41.32	62.22	981	651
Assam	NA	NA	NA	NA	5.45	48.88	897	100	30.91	54.10	876	501
Bihar	15.76	50.10	947	253	8.88	52.16	954	162	27.12	55.60	994	485
Gujarat	24.32	53.33	942	447	10.26	51.24	934	187	27.89	53.47	940	490
Haryana	13.58	51.10	877	233	2.41	47.27	867	44	21.51	52.17	868	358
Karnataka	25.43	51.50	963	449	14.20	54.40	957	250	32.02	58.38	959	526
Kerala	17.02	45.25	1034	389	13.49	45.00	1016	305	19.71	47.20	1022	427
Madhya Pradesh	30.40	54.39	941	526	18.65	53.74	941	327	43.99	60.21	953	696
Maharashtra	30.70	53.90	938	534	19.70	52.09	930	352	38.10	57.09	936	625
Orissa	19.68	56.12	982	344	6.81	55.32	988	122	26.58	60.75	1001	438
Punjab	9.16	54.19	886	150	1.18	52.82	865	19	5.50	53.01	854	89
Rajasthan	21.15	50.76	923	385	8.34	52.09	911	146	35.89	58.14	908	561
Tamil Nadu	27.41	57.46	978	467	15.09	56.02	978	263	31.28	59.74	992	519
Uttar Pradesh	9.57	51.51	886	165	6.71	52.24	879	113	18.14	58.19	909	283
West Bengal	8.87	51.13	911	158	4.43	48.83	891	81	9.43	53.98	878	153

Source: Census of India, 1981, Paper 3, "Provisional Population Totals -- Workers and Non-Workers"  
Census of India, 1961 and 1971, Part II A (ii), Union Primary Census Abstract

Note: Data for Assam are not available so far in the 1981 Census. The minor States, Jammu and Kashmir, and Union Territories have been excluded from the analysis.

Table III A - Ranks corresponding to Table III

	<u>1981</u>				<u>1971</u>				<u>1961</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
Andhra Pradesh	1	1	4	1	1	1	4	1	2	1	5	2
Assam	NA	NA	NA	NA	12	12	11	12	7	10	13	7
Bihar	11	13	6	10	8	8	6	8	9	9	3	9
Gujarat	6	8	7	6	7	11	8	7	8	12	8	8
Haryana	10	11	14	11	14	14	14	14	11	14	14	12
Karnataka	5	4	5	5	5	4	5	6	5	5	6	5
Kerala	9	14	1	7	6	15	1	4	12	15	1	11
Madhya Pradesh	3	5	8	3	3	5	7	3	1	3	7	1
Maharashtra	2	7	9	2	2	9	8	2	3	8	9	3
Orissa	8	3	2	9	10	3	2	10	10	2	2	10
Punjab	13	6	12	14	15	6	15	15	15	13	15	15
Rajasthan	7	12	10	8	9	9	10	9	4	7	11	4
Tamil Nadu	4	2	3	4	4	2	3	5	6	4	4	6
Uttar Pradesh	12	9	12	10	11	7	13	11	13	6	10	13
West Bengal	14	10	11	11	13	13	12	13	14	11	12	14

1 - Workers/Population (women)

2 - Workers/Population (men)

3 - Population Sex-ratio

4 - Worker Sex-ratio





Table IV - Agricultural labourers among Agricultural Workers

	<u>1981 (main workers only)</u>			<u>1971</u>			<u>1961</u>		
	1	2	3	1	2	3	1	2	3
INDIA	0.06	0.57	0.31	0.04	0.63	0.32	0.18	0.30	0.21
Andhra Pradesh	0.09	0.70	0.41	0.06	0.76	0.42	0.19	0.50	0.34
Assam	NA	NA	NA	0.02	0.16	0.14	0.22	0.03	0.07
Bihar	0.03	0.71	0.39	0.02	0.81	0.41	0.16	0.35	0.27
Gujarat	0.05	0.60	0.31	0.05	0.58	0.29	0.22	0.25	0.19
Haryana	0.03	0.30	0.26	0.01	0.41	0.24	0.20	0.06	0.11
Karnataka	0.07	0.65	0.30	0.04	0.67	0.32	0.22	0.29	0.19
Kerala	0.01	0.89	0.59	0.01	0.91	0.53	0.04	0.63	0.36
Madhya Pradesh	0.25	0.46	0.24	0.09	0.54	0.25	0.34	0.23	0.23
Maharashtra	0.14	0.54	0.35	0.09	0.60	0.37	0.28	0.37	0.30
Orissa	0.03	0.68	0.30	0.01	0.72	0.32	0.14	0.30	0.20
Punjab	0.004	0.73	0.37	0.0008	0.66	0.31	0.03	0.11	0.18
Rajasthan	0.08	0.19	0.08	0.06	0.24	0.10	0.35	0.05	0.05
Tamil Nadu	0.07	0.69	0.41	0.04	0.74	0.40	0.18	0.38	0.25
Uttar Pradesh	0.03	0.42	0.19	0.03	0.51	0.22	0.13	0.23	0.12
West Bengal	0.01	0.72	0.41	0.01	0.78	0.42	0.04	0.36	0.27

Source: Census of India, 1981, op citCensus of India, 1961 & 1971, op cit

- 1 - Cultivators/Population (female, rural)
- 2 - Agricultural labourers/Agricultural workers (female, rural)
- 3 - Agricultural labourers/Agricultural workers (male, rural)

Table IV A - Ranks corresponding to Table IV.

	<u>1981</u>			<u>1971</u>			<u>1961</u>		
	1	2	3	1	2	3	1	2	3
Andhra Pradesh	3	5	2	3	4	2	8	2	2
Assam	NA	NA	NA	9	15	14	4	15	14
Bihar	8	4	5	9	2	4	10	6	4
Gujarat	7	9	8	5	10	10	4	9	9
Haryana	8	13	11	11	13	12	7	13	13
Karnataka	5	8	9	6	7	7	4	8	9
Kerala	12	1	1	11	1	1	13	1	1
Madhya Pradesh	1	11	12	1	11	11	2	10	7
Maharashtra	2	10	7	1	9	6	3	4	3
Orissa	8	7	9	11	6	7	11	7	8
Punjab	14	2	6	15	8	9	15	12	11
Rajasthan	4	14	14	3	14	15	1	14	15
Tamil Nadu	5	6	2	6	5	5	9	3	6
Uttar Pradesh	8	12	13	8	12	13	12	10	12
West Bengal	12	3	2	11	3	2	13	5	4

- 1 - Cultivators/Population (female, rural)
- 2 - Agricultural labourers/Agricultural workers  
(female, rural)
- 3 - Agricultural labourers/Agricultural workers  
(male, rural)

Table V - Agricultural labourers - incidence

	1981 (main workers only)			1971			1961		
	1	2	3	1	2	3	1	2	3
INDIA	0.07	0.13	0.61	0.07	0.13	0.50	0.08	0.09	0.82
Andhra Pradesh	0.20	0.18	1.05	0.18	0.19	0.92	0.19	0.16	1.17
Assam	NA	NA	NA	0.003	0.05	0.05	0.01	0.03	0.19
Bihar	0.06	0.17	0.36	0.07	0.19	0.36	0.09	0.12	0.72
Gujarat	0.08	0.13	0.58	0.07	0.12	0.51	0.07	0.08	0.85
Haryana	0.01	0.09	0.12	0.01	0.09	0.07	0.01	0.05	0.27
Karnataka	0.12	0.13	0.89	0.09	0.14	0.58	0.09	0.09	1.00
Kerala	0.06	0.11	0.60	0.07	0.13	0.60	0.06	0.07	0.89
Madhya Pradesh	0.11	0.11	0.91	0.11	0.12	0.83	0.10	0.10	1.01
Maharashtra	0.16	0.14	1.08	0.14	0.16	0.85	0.16	0.14	1.13
Orissa	0.06	0.14	0.46	0.04	0.15	0.25	0.06	0.10	0.62
Punjab	0.01	0.15	0.06	0.002	0.13	0.01	0.004	0.07	0.05
Rajasthan	0.02	0.03	0.46	0.02	0.05	0.41	0.02	0.03	0.71
Tamil Nadu	0.16	0.18	0.90	0.11	0.18	0.60	0.11	0.11	0.96
Uttar Pradesh	0.02	0.06	0.25	0.03	0.10	0.30	0.04	0.06	0.61
West Bengal	0.03	0.15	0.18	0.03	0.16	0.15	0.03	0.10	0.23

Source: Census of India, 1981, op citCensus of India, 1961 & 1971, op cit.

- 1 - Agricultural labourers/Population (female, rural)  
2 - Agricultural labourers/Population (male, rural)  
3 - Agricultural labourers (female)/Agricultural labourers (male) - rural

Table VA - Ranks corresponding to Table V

	<u>1981</u>			<u>1971</u>			<u>1961</u>		
	1	2	3	1	2	3	1	2	3
Andhra Pradesh	1	1	2	1	1	1	1	1	1
Assam	NA	NA	NA	14	14	14	13	14	15
Bihar	7	3	10	6	1	9	5	3	8
Gujarat	6	8	7	6	10	7	7	9	7
Haryana	14	12	13	13	13	13	13	13	13
Karnataka	4	8	5	5	7	6	5	8	4
Kerala	7	10	6	6	8	4	8	10	6
Madhya Pradesh	5	10	3	3	10	3	4	5	3
Maharashtra	2	6	1	2	4	2	2	2	2
Orissa	7	6	8	9	6	11	8	5	10
Punjab	14	4	14	15	8	15	15	10	13
Rajasthan	11	14	8	12	14	8	12	14	9
Tamil Nadu	2	1	4	3	3	4	3	4	5
Uttar Pradesh	11	13	11	10	12	10	10	12	11
West Bengal	10	4	12	10	4	12	11	5	12

- 1 - Agricultural labourers/Population (female, rural)  
 2 - Agricultural labourers/Population (male, rural)  
 3 - Agricultural labourers (female)/Agricultural  
 labourers (male) - rural

Table VI - Cross Cropped Area (GCA)

	1970-71			1960-61		
	1	2	3	1	2	3
INDIA	0.46	0.55	0.36	0.49	0.59	0.37
Andhra Pradesh	0.57	0.63	0.48	0.62	0.67	0.38
Assam	0.01	0.05	0.98	0.01	0.05	0.99
Bihar	0.20	0.34	0.63	0.22	0.39	0.69
Gujarat	0.81	0.80	0.10	0.78	0.75	0.13
Haryana +	0.53	0.64	0.10	0.60	0.76	0.08
Karnataka	0.75	0.80	0.19	0.68	0.83	0.16
Kerala *	0.26	0.34	0.67	0.25	0.28	0.75
Madhya Pradesh	0.39	0.53	0.35	0.38	0.52	0.36
Maharashtra	0.79	0.85	0.13	0.79	0.83	0.12
Orissa	0.09	0.23	0.86	0.10	0.18	0.90
Punjab+	0.25	0.31	0.12	0.28	0.48	0.11
Rajasthan	0.83	0.88	0.01	0.85	0.88	0.01
Tamil Nadu	0.45	0.47	0.57	0.46	0.51	0.54
Uttar Pradesh	0.36	0.44	0.28	0.42	0.57	0.30
West Bengal	0.03	0.12	0.93	0.02	0.16	0.97

Source: All India Report on Agricultural Census, 1970-71,  
Indian Agricultural Statistics, 1960-61, vol.I; 1967-68  
to 1969-70, Vol II.

+ The data for Haryana and Punjab in 1960-61 (prior to their partition) was obtained by using district-level data; Ambala, Gurgaon, Hissar, Karnal, Mahendragarh and Rohtak were included under Haryana, while the remaining districts were included under Punjab.

\* For Kerala, tapioca is included among "coarse grains" since it has the same staple function in the people's diet.

- 1 - GCA under coarse grains and millets  
GCA under all cereals
- 2 - GCA under coarse grains, millets, pulses  
GCA under all food grains
- 3 - GCA under rice  
GCA under all cereals

Table VI A : Figures corresponding to Table

	<u>1970-71</u>			<u>1960-61</u>		
	1	2	3	1	2	3
Andhra Pradesh	5	6	7	5	6	7
Assam	15	15	1	15	15	1
Bihar	12	11	5	12	11	5
Gujarat	2	4	13	3	5	11
Haryana	6	5	13	6	4	14
Karnataka	4	3	10	4	2	10
Kerala	10	9	4	11	12	4
Madhya Pradesh	8	7	8	9	8	8
Maharashtra	3	1	11	2	2	12
Orissa	13	13	3	13	13	3
Punjab	11	12	12	10	10	13
Rajasthan	1	2	15	1	1	15
Tamil Nadu	7	8	6	7	9	6
Uttar Pradesh	9	10	9	8	7	9
West Bengal	14	14	2	14	14	2

1 - GCA under coarse grains and millets  
GCA under all cereals

2 - GCA under coarse grains, millets, pulses  
GCA under all foodgrains

3 - GCA under rice  
GCA under all cereals

Table VII. - Income of agricultural labour households and male migration

	<u>Male migration</u>		<u>Annual income of landless agricultural labour households</u>	
	<u>1971</u>		<u>1974-75</u>	
	<u>%</u>	<u>Ranks</u>	<u>Rs.</u>	<u>Reverse Ranks.</u>
Andhra Pradesh	15.2	6	1443	2
Assam	17.5	2	2459	13
Bihar	6.1	14	1654	7
Gujarat	13.1	8	2086	11
Haryana	+	10	2980	14
Karnataka	17.4	3	1528	4
Kerala	16.2	4	1714	9
Madhya Pradesh	15.6	5	1527	3
Maharashtra	19.2	1	1672	8
Orissa	11.9	9	1018	1
Punjab	9.2	10	3522	15
Rajasthan	7.7	13	2422	12
Tamil Nadu	14.2	7	1618	5
Uttar Pradesh	5.8	15	2023	10
West Bengal	8.1	12	1618	5
<u>India</u>			1710	

Source: Census of India, 1971, Special Monograph No.1, "Birthplace migration in India", Appendix A, Table 1, pp 5-6.  
Rural Labour Enquiry, 1974-75, "Final Report on household income and expenditure of rural labour households."

+ Data for Haryana are included in Punjab.

Table VIII

Growth rates (% annual compound rates)  
(1962-65 to 1970-73)

	<u>Cereals</u>		<u>Foodgrains</u>	
	Area	Output	Area	Output
India	0.70	3.02	0.42	2.74
Andhra Pradesh	- 1.15	- 0.94	- 1.11	-0.98
Assam	1.89	2.23	1.90	2.23
Bihar	0.52	1.88	0.52	1.52
Gujarat	0.40	4.74	0.22	4.50
Haryana	3.67	11.60	1.22	7.88
Karnataka	- 1.96	2.47	- 1.88	2.45
Kerala	1.04	2.20	0.90	2.15
Madhya Pradesh	0.53	1.37	0.68	1.63
Maharashtra	- 1.00	-4.98	- 0.97	-4.89
Orissa	0.64	-0.62	0.63	-0.61
Punjab	5.17	12.42	2.67	10.42
Rajasthan	1.52	4.78	1.33	4.72
Tamil Nadu	- 0.09	2.88	- 0.01	2.87
Uttar Pradesh	1.96	5.15	1.10	4.30
West Bengal	2.01	3.73	1.63	3.62

Source: G.S.Bhalla and Y.K.Alagh, Performance of Indian Agriculture- a districtwise study, Sterling Publishers, New Delhi, 1979, Tables 12 & 14.



Table VIII A Ranks corresponding to Table VIII

	<u>Cereals</u>		<u>Foodgrains</u>	
	<u>Area</u>	<u>Output</u>	<u>Area</u>	<u>Output</u>
Andhra Pradesh	2	2	2	2
Assam	11	7	14	7
Bihar	6	5	6	4
Gujarat	5	11	5	12
Haryana	14	14	11	14
Karnataka	1	8	1	8
Kerala	9	6	9	6
Madhya Pradesh	7	4	8	5
Maharashtra	3	1	3	1
Orissa	8	3	7	3
Punjab	15	15	15	15
Rajasthan	10	12	12	13
Tamil Nadu	4	9	4	9
Uttar Pradesh	12	13	10	11
West Bengal	13	10	13	10

Growth - rates during the period 1962-65 to 1970-73 (reverse ranks).

### Footnotes

- 1/ See, for example, J.Krishnamurti; "Changing concepts of work in the Indian Censuses: 1901-61", Indian Economic and Social History Review, Vol.XIV, No.3, July-September, 1977, pp.323-340.
- 2/ Income earned outside the home may not always accrue to the women, e.g. when the family is recruited as a part of a gang by a labour contractor.
- 3/ Such macro data, complemented by micro-level, time-use studies, would provide a wealth of information about domestic work.
- 4/ Domestic work, of course, was excluded in all censuses except for a "mistake" in Madras Presidency and a few other districts in the 1931 census.
- 5/ See page 11 below, and footnote 13.
- 6/ In the 1931 census, an overcount due to the inclusion of women doing only domestic work in their own homes had taken place mainly in Madras Presidency. It is possible that those in charge of the 1951 census in Madras may have over-reacted to the earlier error by interpreting the instructions too strictly.
- 7/ Supervision of cultivation was regarded as work.
- 8/ The economic questions started out by asking, "are you mainly a worker or not?" If the answer was in the negative, the person was classified as mainly a non-worker, though s/he may have had some secondary work. However, secondary work was not canvassed properly.
- 9/ The 1961 economic questions asked directly if the person was a cultivator, agricultural labourer, working in household industry, or any other work. If none of these, the person was called a non-worker.
- 10/ See J.P.Ambannavar, "Comparability and Adjustment of the Indian Working Force Data, Censuses 1911-61", Artha Vijnana, vol.11 No.4, December 1969, pp.521-540. Two interesting features of the state-level census rates may be noted. First, while the rate fell for most states between 1931 and 1951, there were some exceptions. For men, there was a small rise in Maharashtra and West Bengal. For women, there was a perceptible rise in

Maharashtra, Punjab, and West Bengal, and a small rise in Madhya Pradesh. Second, counter to the pattern in other states, the rate for women registered a marked decline between 1951 and 1961 in Punjab, Rajasthan, U.P. and West Bengal.

- 11/ Census of India 1961, Vol.I, part II B(iii), General Economic Tables, Appendix IV, p.74.
- 12/ Krishnamurthy, op.cit. p.326
- 13/ See, for example, Census of India 1961, Vol.I part II B (iii), General Economic Tables, Appendix I, p.12; Ambannavar, op.cit.
- 14/ While it must be remembered that the true incidence of child labour is probably higher than what is reported, it would be surprising if the work-rate for children aged 5-14 were as high as the rate for adults.
- 15/ J.P.Ambannavar, "Changes in economic activity of males and females in India: 1911-61", Demography India, Vol.IV, no.2, 1975, pp.345-364.
- 16/ See Asok Mitra, The Status of Women - Literacy and Employment, ICSSR, Allied Publishers, N. Delhi, 1979.
- 17/ The rank correlation coefficients for each of the five variables between 1961, 1971 and 1981 (with itself) are positive and significant at the 0.1% level.
- 18/ The rank correlation coefficient between each pair of these variables is significant at the 1% level or better in each of the three census years.
- 19/ The correlations were done only for 1961, because of the excessive undercounting and hence unreliability of the rankings for cultivators in 1971. The proportion of cultivators in the female population was unusually high in Assam when compared to other paddy growing states, and hence, it lay completely outside the fitted relation. Possibly, this is because parts of Assam resemble the hill states in having high proportions of women cultivators.
- 20/ I am indebted to Joan Mencher for bringing this to my attention.
- 21/ The crudeness of the index of regional impoverishment affects the goodness of fit. The rank correlation coefficients between the coarse grain ratio and the sex-ratio among agricultural labourers are positive and significant in both years, but at the 5% level. The rank correlations between the coarse grain ratio and the incidence of agricultural labourers in the female population are positive and significant at the 5% level, provided Rajasthan is excluded.

- 22/ The rank correlation coefficients between cereal/foodgrains growth rates of area and output and the incidence of agricultural labourers in the female population as well as the agricultural labour sex-ratio are negative and significant at the 1% level for both census years.
- 23/ The rank correlation coefficients are negative and significant at the 1% level in the case of the incidence of agricultural labourers in the female population, and at the 5% level for the agricultural labour sex-ratio in 1971. Interestingly, there was no significant correlation between the income variable obtained by the 1963-65 Rural Labour Enquiry and the agricultural labour variables obtained by the 1961 Census. A hypothesis that needs further investigation, therefore, is that the incidence of women agricultural labourers and rural labour household incomes are becoming more closely (and negatively) correlated over time.
- 24/ Rural Labour Enquiry, 1974-75, op cit., and Rural Labour Enquiry, 1963-65, "Final Report".
- 25/ The rank correlation coefficients are positive and significant at the 1% level, provided Assam is excluded. Assam shows a striking divergence from the fitted relationship since it has both a high rate of male (inter and intra-district) migration and a low incidence of women agricultural labourers.

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